VERSION 7

Base Realignment and Closure (BRAC) Cleanup Plan

Devens Reserve Forces Training Area Devens, Massachusetts

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LIST OF ACRONYMS

AAFES	Army Air Force Exchange Service
ACEC	Area of Critical Environmental Concern
ACM	Asbestos-Containing Material
AOC	Area of Contamination
ARAR	Applicable or Relevant and Appropriate Requirement
AREE	Area Requiring Environmental Evaluation
AST	Aboveground Storage Tank
BCP	BRAC Cleanup Plan
BCT	BRAC Cleanup Team
BEC	BRAC Environmental Coordinator
BRAC	Base Realignment and Closure
CAA	Clean Air Act
CENAE	U. S. Army Corps of Engineers, New England District
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERFA	Community Environmental Response Facilitation Act
CFR	Code of Federal Regulations
CNST	Construction
CRP	Community Relations Plan
CWA	Clean Water act
DA	Department of the Army
DCC	Devens Commerce Center
DEH	Directorate of Engineering and Housing
DERA	Defense Environmental Restoration Account
DERP	Defense Environmental Restoration Program
DOD	Department of Defense
DPW	Department of Public Works
DRMO	Defense Reutilization and Marketing Office
EA	Environmental Assessment
EBS	Environmental Baseline Survey
EE	Environmental Evaluation
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EMO	Environmental Management Office
EnPA	Enhanced Preliminary Assessment
EOD	Explosive Ordnance Disposal
EPCRA	Emergency Planning and Community Right-to-Know Act
ESD	Explanation of Significant Difference
FA	Further Action

LIST OF ACRONYMS

Continued

FFA	Federal Facilities Agreement
FGCDR	Former Golf Course Driving Range
FONSI	Finding of No Significant Impact
FORSCOM	Forces Command
FOSL	Finding of Suitability to Lease
FOST	Finding of Suitability to Transfer
FS	Feasibility Study
HRS	Hazard Ranking System
IRA	Immediate Response Action
IRDMIS	Installation Restoration Data Management Information System
IRP	Installation Restoration Program
JBOS	Joint Boards of Selectmen
LSP	Licensed Site Professional
LTM	Long-Term Monitoring
MAAF	Moore Army Airfield
MADEP	Massachusetts Department of Environmental Protection
MCLs	Maximum Contaminant Levels
MCP	Massachusetts Contingency Plan
MDPS-DFP	Massachusetts Department of Public Safety-Division of Fire Prevention
MEP	Master Environmental Plan
MEPA	Massachusetts Environmental Policy Act
MGLB	Massachusetts Government Land Bank
MWAA	Maintenance and Waste Accumulation Areas
NBC	Nuclear, Biological and Chemical (Training School)
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NED	New England Division (U.S. Army Corps of Engineers)
NEPA	National Environmental Policy Act
NFA	No Further Action
NFADD	No Further Action Decision Document
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NRC	Nuclear Regulatory Commission
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PA	Preliminary Assessment
PCE	Tetrachloroethylene
PCB	Polychlorinated Biphenyl
PIRP	Public Involvement and Response Plan
POL	Petroleum, Oil, and Lubricants
PP	Proposed Plan
QA/QC	Quality Assurance/Quality Control
RA	Remedial Action

LIST OF ACRONYMS

Continued

RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RES	Restricted Emission Status
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI	Remedial Investigation
ROD	Record of Decision
RFTA	Reserve Forces Training Area
SA	Study Area
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
SPCC	Spill Prevention Control and Countermeasure
SI	Site Investigation
SPIA	South Post Impact Area
SWMU	Solid Waste Management Unit
TDA	Table of Distribution and Allowances
TSCA	Toxic Substances Control Act
TSD	Treatment, Storage, or Disposal
USACE	U.S. Army Corps of Engineers
USAEC	U.S. Army Environmental Center
USAR	U.S. Army Reserves
USATHMA	U.S. Army Toxic and Hazardous Materials Agency
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
UST	Underground Storage Tank
UXO	Unexploded Ordnance
WBS	Work Breakdown Structure
WWTP	Wastewater Treatment Plant

GLOSSARY OF TERMS

Applicable or Relevant and Appropriate Requirement (ARAR). Cleanup standards, standards of control, and other environmental protection requirements, criteria, or limitations promulgated in federal or state regulations that define remedial action requirements at CERCLA sites.

Area Requiring Environmental Evaluation (AREE). Individual site, multiple sites or program area identified through an environmental assessment or site investigation as a potential threat to human health or the environment which requires further investigation.

Base Environmental Coordinator (BEC). U.S. Army representative of the BCT

Base Closure and Realignment Act (BRAC Act). The Base Closure and Realignment (sic) Act of 1988 (P.L. 100-526, 102 Stat. 2623) (BRAC 88 or BRAC I) and the Defense Base Closure and Realignment Act of 1990 (P.L. 101-0510, 104 Stat. 1808) (BRAC 91, 93, 95) which legislated the closure or realignment of military bases.

BRAC Cleanup Team (BCT). Team formed to manage environmental programs for BRAC installations consisting of a U.S. Army installation representative, USEPA region representative, and state environmental agency representative.

Community Environmental Response Facilitation Act (CERFA). Amendment to CERCLA which established new procedures or contamination assessment, remediation (cleanup), and regulatory agency notification and concurrence for federal facility closures. CERFA requires the U.S. Army to identify uncontaminated property; its primary goal is to accelerate the transfer of property that can be immediately reused and redeveloped. The USAEC prepared CERFA reports for all U.S. Army BRAC installations. Included in the report is an environmental condition of property map which classifies property in four categories, CERFA clean, excluded, qualified and disqualified.

Community Relations Plan (CRP). Formal plan for community relations activities at an NPL site (see Public Involvement and Response Plan).

GLOSSARY OF TERMS

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (1980). Otherwise known as Superfund; provides for liability, compensation, cleanup and emergency response for hazardous substances released to the environment. It was amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA). Section 120 of CERCLA specifically addresses procedures to be followed for federal facilities investigation and cleanup including BRAC installations. Section 120(h) was amended by the Community Environmental Response Facilitation Act of 1992 (CERFA).

Defense Environmental Restoration Account (DERA). Defense Appropriations Act funding mechanism for the DERP IRP (except the BRAC IRP).

Defense Environmental Restoration Program (DERP). Program established in 1984 to promote and coordinate efforts for the evaluation and cleanup of contamination at Department of Defense (DOD) installations. The program currently includes: the Installation Restoration Program (IRP), under which DOD installation investigations and site cleanups are conducted; and Other Hazardous Waste (OHW) Operations, through which research, development and demonstration programs aimed at improving remediation technology and reducing DOD waste generation rates are conducted. DERP is managed centrally by the Office of the Secretary of Defense. SARA provides continuing authority for the Secretary of Defense to carry out this program in consultation with the USEPA and in compliance with CERCLA and SARA guidelines.

Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA). Title III of SARA which requires certain facilities to coordinate emergency planning with local and regional authorities and prepare hazardous material inventory and release data (Tier I and II and Toxic Release Inventory Reports). Executive Order 12856 signed August 3, 1993 requires that federal facilities comply with EPCRA.

Environmental Assessment (EA). Document prepared to evaluate the environmental impacts of a federal action in compliance with NEPA when an EIS may not be necessary. If the EA indicates that there may be negative impacts to the environment from the proposed action, an EIS is required. If no significant impact is identified in the EA, a Finding of No Significant Impact (FONSI) is documented and no further evaluation under NEPA is required.

Environmental Impact Statement (EIS). Document required by the NEPA which examines major federal actions to determine their impact on the environment. Installation disposal and reuse actions require the preparation of NEPA documentation.

Explanation of Significant Difference (ESD). Document which identifies significant changes that are being made to a component of the remedial action remedy in a ROD or DD. If fundamental changes are made to the overall remedy they are documented in a ROD or DD amendment and not an ESD.

GLOSSARY OF TERMS

Feasibility Study (FS). CERCLA environmental study undertaken to develop and evaluate options for remedial action. Generally performed concurrently with and using data gathered during the RI. The FS evaluates remedial action alternatives based on technical feasibility and cost effectiveness, regulatory requirements, public health effects, and environmental impact.

Federal Facility Agreement (FFA). Binding agreement between the party responsible for cleanup of a NPL site and the USEPA which formalizes the CERCLA procedures and schedules to be followed for the site.

Hazard Ranking System (HRS). System established by the USEPA for evaluating contaminated sites based on the potential hazard posed to public health and the environment. The system uses PA and SI data to generate a score ranging from 0 to 100 for each installation or individual site evaluated. Installations with a score above 28.5 may be included on the NPL.

Installation Restoration Data Management Information System (IRDMIS). Database developed by the U.S. Army and maintained by the USAEC to manage sampling and analysis data generated at U.S. Army installation undergoing environmental investigation and restoration.

Installation Restoration Program (IRP). Program implemented under the DERP to investigate and remediate DOD installations. The IRP conforms with the NCP and CERCLA and applies guidelines promulgated by the USEPA. The IRP for active installations is funded by the DERA, the IRP for BRAC installations is funded through the Military Construction Act.

National Environmental Policy Act (NEPA). Act passed in 1970 to encourage the assessment of environmental impact in federal decision-making processes.

National Oil and Hazardous Substance Pollution Contingency Plan (NCP). Plan which provides the organizational structure and procedures for preparing for and responding to discharges of oil and releases of hazardous substances in accordance with CERCLA and the Clean Water Act (CWA). These procedures include the completion of a Preliminary Assessment, Remedial Investigation/Feasibility Study, Proposed Plan, Remedial design and Remedial Action.

National Pollutant Discharge Elimination System (NPDES). A USEPA-administered program authorized by the Clean Water Act (CWA) to monitor wastewater discharges to surface and ground waters. NPDES elements include industrial and sanitary wastewater discharge permitting programs and storm water permitting programs.

GLOSSARY OF TERMS

Continued

National Priorities List (NPL). Listing of CERCLA hazardous substance release sites scoring 28.5 or higher under the USEPA Hazard Ranking System. Such sites are first proposed for NPL listing. Following a public comment period, proposed NPL sites may be listed on the NPL or may be deleted from consideration for placement on the list. Regulatory oversight for CERCLA site restoration actions at NPL installation is provided by the USEPA. Such installation is required to enter into a FFA.

No Further Action Decision Document. A public document that formalizes a BRAC Cleanup Team (BCT) decision that no further action is required at a site.

Operable Unit (OU). Environmental restoration unit identified as part of the CERCLA environmental restoration.

Preliminary Assessment (PA). The first phase of investigation in the CERCLA environmental restoration process. The PA consists of a review of existing information and site reconnaissance if appropriate, to determine areas requiring additional evaluation (AREEs).

Proposed Plan (PP). Document which identifies the preferred remedial action alternative for a site and which provides a brief summary of all of the alternatives studied in the detailed analysis phase of the RI/FS.

Public Involvement and Response Plan (PIRP) A plan developed by the Army through research of the installation and community, and used to encourage two-way communication with the public and involved agencies. The plan assists in defining citizen concerns and suggestions regarding the installation and to provide guidance for planning additional public involvement activities.

RCRA Facility Assessment (RFA). First phase of the RCRA corrective action program for a facility consisting of a records review and site inspection to gather information on releases at the facility. The RFA process includes an evaluation of SWMUs as well as preliminary determinations regarding the need for further investigation. The RFA roughly equates to the PA conducted under the CERCLA environmental program.

RCRA Facility Investigation (RFI). Second phase of the RCRA corrective action program for a facility conducted at installations where the RFA identified the need for further evaluation. The RFI consists of multimedia investigations conducted to characterize the extent of releases at the RCRA facility. The RFI roughly equates to the RI conducted under the CERCLA environmental restoration process.

Record of Decision (ROD). Document which formalizes the selection of remedial actions which are to be implemented at an NPL site. The ROD certifies that the remedy selection process was carried out in accordance with CERCLA and with the NCP. It describes the treatment, engineering, and institutional components of the remedial action and remediation goals. The ROD roughly equates to a DD for a non-NPL site.

Remedial Action (RA). Final phase of the CERCLA environmental restoration process during which technical drawings and specifications are developed for the subsequent Remedial Action. These specifications are based upon the detailed description of the remedy and the cleanup criteria provided in the ROD or DD.

Remedial Investigation (RI). CERCLA environmental restoration process phase undertaken to determine the nature and extent of the problem represented by a release of CERCLA hazardous substances. The RI includes multimedia sampling, field studies, monitoring, data analysis and completion of a baseline risk assessment and ecological evaluation to determine the nature, extent, and impacts to the human health and environment from contaminants present at the site if no remedial action is taken.

Resource Conservation and Recovery Act (RCRA). Federal law introduced in 1976 as an amendment to the Solid Waste Disposal Act. RCRA consists of 9 subtitles including subtitles C, D, and I which outline management requirements for hazardous waste, solid waste and underground storage tanks containing petroleum products, respectively.

Restoration Advisory Board (RAB). Board which acts as a forum for discussion and exchange of cleanup information between the DOD installation representatives and the public at BRAC installations where property will be available for transfer. The RAB consists of DOD component, USEPA, state environmental agency, and local community representatives, and is jointly chaired by the BEC and a local community member.

Site Investigation (SI). CERCLA investigation conducted if a Preliminary Assessment indicates the need for further investigation. SIs routinely involve visual inspections and the collection and analysis of multimedia samples to evaluate the extent of the problem and to determine whether a more detailed study such as an RI/FS is necessary.

Solid Waste Management Unit (SWMU). Waste management unit at a RCRA facility from which hazardous constituents might migrate. SWMUs may include containers, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators and recycling units, and wastewater treatment units.

Spill Prevention Control and Countermeasures (SPCC). Actions taken by an installation to address potential releases of hazardous substances or petroleum products. A SPCC Plan which documents procedures established by an installation to effect these response actions may be required for an installation pursuant to the Clean Water Act, RCRA, or SARA.

Superfund Amendments and Reauthorization Act (SARA). Law and amendments to CERCLA which address liability, compensation, cleanup and emergency response for hazardous substance releases. Title III of SARA is the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA).

Zone. Geographically contiguous area amenable to investigation in an SI or RI as a single unit identified to organize installation field efforts, group data from multiple investigations, facilitate the development of conceptual site models, prepare detailed maps and otherwise manage investigation activities. Zones are different than OU response actions.

EXECUTIVE SUMMARY

Introduction

This Base Realignment and Closure (BRAC) Cleanup Plan (BCP) describes the status, and management and response strategy related to the former Fort Devens' ongoing environmental restoration and associated compliance programs. The scope of the BCP is based on requirements derived from the following laws: the Base Closure and Realignment Act; National Environmental Policy Act (NEPA); Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Community Environmental Response Facilitation Act (CERFA); Resource Conservation and Recovery Act (RCRA); and other applicable laws. The BCP is intended to be a dynamic planning document, developed by a BRAC Cleanup Team (BCT). The BCP will be updated regularly to reflect the current status and strategies of remedial actions and compliance programs. This document is the latest in a series of updates and represents conditions and strategies as of September 2000.

EBS / FOST / FOSL Process

Fort Devens was identified for realignment and closure under BRAC 91. In FY 96, the Army closed Fort Devens and portions of North and Main Post, and all of South Post, were realigned as the Devens Reserve Forces Training Area.

In FY96, the Army transferred 2,354 acres of land and leased another 686.4 acres to the Massachusetts Development and Finance Agency, Devens Commerce Center, (MassDevelopment).

In April 1996, an Environmental Baseline Survey (EBS) was conducted to determine the suitability to transfer parcel A.20 (a 45 acre parcel of the Main Post identified as the Ammunition Supply Point (ASP) to MassDevelopment for open space and recreational use. A Finding of Suitability to Transfer (FOST) was approved in July 1999.

In FY 97, an additional 21 acres of previously leased land was transferred to MassDevelopment. Approximately 222 acres of land was also transferred to the Federal Bureau of Prisons. The installation also completed the Environmental Condition of Property (ECOP) for a 22 acre parcel to be transferred to the U.S. Department of Labor.

In January 1998, an Environmental Baseline Survey (EBS) was conducted to determine the suitability to transfer parcel A.14 (a .7 acre parcel of the Main Post) to MassDevelopment for Innovation and Technology Business use. A Finding of Suitability to Transfer (FOST) was approved in February 1998.

In January 1998 an Environmental Baseline Survey (EBS) was conducted to determine the suitability to transfer parcel A.17 (a 4.9 acre parcel of the Main Post) to MassDevelopment for

Innovation and Technology Business use and as a Rail Industrial Zone. A Finding of Suitability to Transfer (FOST) for parcel A.17 was approved in February 1998.

In May 1998 a Draft FOST was issued for the transfer of a 55-acre portion of Parcel A.6 of the Main Post, to MassDevelopment. Future use of this parcel is for Rail, Industrial, and Trade-Related Use. A revised FOST was issued in January 1999 for the transfer of 94 acres vice 55 acres of Parcel A.6 to MassDevelopment. A Finding of Suitability to Transfer was approved in March of 1999.

In June 1998, an Environmental Baseline Survey (EBS) was conducted to determine the suitability to transfer the Nashua River Area of the former Fort Devens to the Department of Interior for use as a greenway along the Nashua River, as open space, and as part of the Oxbow National Wildlife Refuge. The EBS determined that a 773 acres of the proposed 836 acre parcel was suitable for transfer according to CERFA, and recommended this land be classified as suitable for transfer. An Environmental Condition of Property was completed in January of 1999.

An Environmental Baseline Survey (EBS) was conducted to determine the suitability to transfer parcel A.13 (a 1.3-acre parcel of the Main Post) to MassDevelopment for Innovative and Technology Business use. A Finding of Suitability to Transfer (FOST) was approved in March 1999.

An Environmental Baseline Survey (EBS) was conducted to determine the suitability to transfer parcel A.1.a (a 4.9 acre portion of transfer parcel A.1 of the Main Post) To MassDevelopment for Rail, Industrial, and Trade Related use. A Draft Finding of Suitability to Transfer (FOST) was published in June 1999.

An Environmental Baseline Survey (EBS) was conducted to determine the suitability to transfer parcel A.1.b (a 2.1 acre portion of parcel A.1.a of the Main Post) to MassDevelopment for Rail, Industrial, and Trade Related use. A Finding of Suitability to Transfer (FOST) was approved in January 2000.

In April 1996, an Environmental Baseline Survey (EBS) was conducted to determine the suitability to transfer parcel A.3 (a 14 acre portion of the Main Post) to MassDevelopment for Rail, Industrial, and Trade Related use. A Finding of Suitability to Transfer (FOST) was approved in April 2000.

In April 1996, an Environmental Baseline Survey (EBS) was conducted to determine the suitability to transfer parcel A.10 (a 1.2 acre portion of the Main Post) to MassDevelopment for Rail, Industrial, and Trade Related use. A Finding of Suitability to Transfer (FOST) was approved in April 2000

EXECUTIVE SUMMARY

Status of Environmental Restoration Program

The Installation Restoration Program (IRP) effort at Fort Devens was initiated in 1982 and has continued to the present. In 1982, an Installation Assessment (Preliminary Assessment) was conducted at Fort Devens. No further CERCLA-related studies were recommended in the assessment because no off-site migration of contamination was anticipated. In 1985, a RCRA Facility Assessment (RFA) was conducted to identify solid waste management units (SWMUs) to be included in Fort Devens' RCRA part B permit application for a hazardous waste storage facility.

Forty SWMUs were identified during the RFA. A Master Environmental Plan (MEP) was initiated in 1988, in order to define areas requiring investigation, to outline types of studies required, and to assist the U.S. Army with continuity of the Fort Devens IRP program. The interrelationship between the U.S. Army's IRP and the CERCLA/Superfund Amendments and Reauthorization Act (SARA) process is delineated in the MEP. Fort Devens was placed on the National Priorities List (NPL) in December 1989 as a result of volatile organic compound contamination in the groundwater underlying the Shepley's Hill Landfill and metal contamination in the groundwater underlying the Cold Spring Brook Landfill. In 1991, a Federal Facilities Agreement (FFA) was signed by the U.S. Army and the USEPA Region I. The FFA set the framework for the implementation of the CERCLA/SARA process at Fort Devens.

With the inclusion of Fort Devens on the Defense Secretary's BRAC 1991 list, an Enhanced Preliminary Assessment (EnPA) was initiated to address BRAC issues in addition to the CERCLA process. The EnPA, completed in April 1992, identified 59 site-specific areas requiring environmental evaluation (AREEs) and 10 installation-wide AREEs (AREE 60 through 69). Fort Devens later added the installation's storm sewers as another installation-wide AREE.

From 1993 to 1995, BRAC Environmental Evaluations (EE) were conducted for eight of the installation-wide AREEs, including AREEs 61, 63, 65, 66, 67, 68 69 and 70. . The 59 site-specific AREEs became Study Areas (SAs) or Areas of Contamination (AOCs) according to the results of Site Investigations (SIs) conducted for each AREE. The SIs have determined the SAs that require no further action (NFA), the SAs that would become NFA sites following minor removal of contamination, and the SAs that are now AOCs and undergoing Remedial Investigation/Feasibility Studies (RI/FS).

Several restoration-related compliance actions have also been conducted at the former Fort Devens. These include underground storage tank (UST) removal (AREE 63), asbestos removal (AREE 65), PCB-contaminated transformer removal (AREE 66), radon monitoring (AREE 67), lead-paint surveys (AREE 68), and contaminated soil removal from historic spill sites (AREE 69).

EXECUTIVE SUMMARY

Key Restoration and Transferability Strategies and Schedules

A comprehensive strategy to identify and implement appropriate remedial actions has been established. It fully considers regulatory requirements, any disposal guidelines, and reuse goals of the local community. The strategy focuses on the identification and implementation of effective, interim and early actions to mitigate risks to human health and the environment. Through the CERCLA RI/FS and installation-wide decision document process, the strategy also provides for the identification of appropriate, cost effective and integrated remedial actions, installation-wide. The BCT is working with the Fort Devens environmental restoration Project Team to expedite the implementation of these remedial actions by accelerating schedules, overlapping remedial design phases, and other innovative actions in order to restore the former Fort Devens and transfer the property as quickly as possible.

2 PROGRAM STATUS AND STRATEGIES

This section summarizes the current strategy and status of the environmental restoration projects (2.1), ongoing compliance activities (2.2), the status of the cultural and natural resources program (2.3), and the environmental condition and suitability for transfer (2.4) of installation property. Several portions of the Superfund cleanup are covered in more than one section. Schedules for the implementation of this strategy are described in Chapter 3. Figures are found at the end of the Section 2.

2.1 Environmental Program Status

Fort Devens was listed on the National Priorities List (NPL) in December 1989. The lead regulatory oversight agency at the installation is currently the U.S. Environmental Protection Agency (USEPA), Region I. The BRAC Environmental Office of the Devens Reserve Forces Training Area (RFTA) is responsible for establishing and maintaining closure-related environmental programs, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) / NPL compliance programs, and Superfund / closure-related remediation efforts at the former Fort Devens. Two principal Army components assist the BRAC Environmental Office's efforts: the U.S. Army Environmental Center (AEC) and the U.S. Army Corps of Engineers - New England District (CENAE) has expanded support to include Site Investigation (SI)/ Remedial Investigation (RI) in addition to Remedial Design (RD), Remedial Action (RA), Removal Action, real estate, and natural and cultural resource management. The Environmental Division of the Directorate of Public Works (DPW) currently handles all non-NPL compliance activities related to the Devens RFTA.

On 15 November 1991, Fort Devens and USEPA Region I signed a Federal Facilities Agreement (FFA) pursuant to the following authorities: Section 120 of CERCLA, Sections 6001, 3008(h), 3006, and 3004(u) and (v) of the Resources Conservation and Recovery Act (RCRA), National Environmental Policy Act (NEPA), and the Defense Environmental Restoration Program (DERP). The Massachusetts Department of Environmental Protection (MADEP) did not sign the FFA. The FFA requires compliance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), CERCLA guidance and policy, RCRA guidance and policy, and Applicable or Relevant and Appropriate Requirements (ARARs). Under Section 5.9 of the FFA, the Master Environmental Plan (MEP) has been developed to be the detailed, comprehensive plan for the work to be performed pursuant to CERCLA. As mandated by the FFA, the MEP is updated annually to reflect decisions made on each site. In 1994, the BCT approved the BCP to incorporate annual updates to the MEP.

Environmental restoration programs at the former Fort Devens are currently conducted under the BRAC Installation Restoration Program (IRP) in compliance with applicable Department of the

Army (DA), Department of Defense (DoD), and state and federal statutes and regulations, particularly CERCLA and SARA. Environmental compliance programs at the former Fort Devens are completed in compliance with applicable DA, DoD and state regulations, and federal regulatory programs including those administered under the Clean Air Act (CAA), Clean Water Act (CWA), Safe Drinking Water Act (SDWA), RCRA, and Toxic Substances Control Act (TSCA).

Under Section 6.3 of the FFA, the Army agreed to undertake, fund, implement, and report on the following tasks, if required:

- Preliminary assessment and site inspection of potentially contaminated sites;
- Remedial Investigations (RIs) of all contaminated sites;
- Feasibility Studies (FSs) for all contaminated sites;
- Proposed Plans (PPs) and Records Of Decision (RODs) for all contaminated sites;
- Removals, RDs, and RAs for all contaminated sites; and
- Operation and maintenance of RAs at contaminated sites.

An environmental restoration program has been in place at Fort Devens since March, 1988.

Table 2-1 lists the 324 sites of environmental investigation at Fort Devens designated as study areas (SAs), areas of contamination (AOCs), or Areas Requiring Environmental Evaluation (AREEs). Sites listed in Table 2-1 and Figures 2-1 and 2-2 do not show Above-ground Storage Tanks (ASTs), Asbestos, Lead-based Paint, Radon, and Underground Storage Tanks (USTs). Due to the large number of sites covered under these topics, a map would not assist interpretation. The table lists the status of the site and refers to the most recent document available pertaining to the site. Most of the sites at the former Fort Devens have been advanced to a No Further Action (NFA) status after further investigation or restoration, and signed NFA Under CERCLA Decisions are referenced. Environmental restoration sites, and other sites awaiting a NFA decision are examined more fully in table 2-2. This second table lists environmental concerns, past activities, and planned activities. Dates for future actions are based on the cleanup schedule, as presented in chapter three. Cross-referenced schedule information is provided in table 2-2 so that tasks may be easily tracked in both tables. Several AREEs identified under the restoration program are also covered in the compliance section (2.2).

Several installation-wide assessments have been conducted to identify the presence of contamination sources at Fort Devens. These include the Initial Installation Assessment

completed in 1983, a RCRA Facility Assessment (RFA) completed in 1985, the Enhanced Preliminary Assessment (EnPA) completed in 1992, and the Community Environmental Response Facilitation Act (CERFA) Investigation completed in April 1994. The most recent installation investigation conducted at Fort Devens was the Environmental Baseline Survey - Basewide, which was completed in April 1996. Several other installation-wide surveys related to environmental compliance programs have also been conducted at Fort Devens.
The EnPA identified installation-wide AREEs 60 - 69. AREE 70 was later added by the installation.

- AREE 60 (Training Areas and Ranges)
- AREE 61 (Maintenance and Waste Accumulation Areas (MWAAs)
- AREE 62 (Existing USTs)
- AREE 63 (Previously Removed USTs)
- AREE 64 (ASTs)
- AREE 65 (Asbestos)
- AREE 66 (Transformers)
- AREE 67 (Radon)
- AREE 68 (Lead Paint)
- AREE 69 (Past Spill Sites)
- AREE 70 (Storm Sewer System)

AREE 60, which includes 13 ranges, was not included in the assessment because the ranges are currently being managed by the installation under existing compliance programs. The ranges are located on the South Post, which will continue to be used as a training area by the Devens Reserve Forces Training Area. The BRAC Environmental Evaluation (EE) was initiated as an installation-wide source assessment; it was conducted in three phases. Phase I began in April 1993 to address AREE 61 (MWAAs), AREE 62 (Existing USTs), AREE 63 (Previously Removed USTs), AREE 64 (ASTs), AREE 66 (Polychlorinated Biphenyl (PCB) Transformers), and AREE 69 (Past Spill Sites). Phase II of the BRAC EE was initiated during May 1993, and addressed AREE 70 (Storm Sewer Systems). Phase III of the BRAC EE addressed AREE 65 (Asbestos), AREE 67 (Radon), and AREE 68 (Lead Paint). As of October 1995, Final BRAC EE Reports were available for AREEs 61, 63, 65, 66, 67, 68, 69, and 70.

2.1.1 ZONE/OPERABLE UNIT (OU) DESIGNATION AND STRATEGY

The designation of zones and OUs as part of the environmental restoration process has been found to be valuable in evaluating sites and developing cleanup strategies at installations. Zones are tools for organizing and defining areas of investigation. OUs are derived from an evaluation of hydrogeologic and chemical analytical data within an investigative zone, or by comparing data

between zones. The strategies for designating zones and OUs at the former Fort Devens are described below.

Zone Designations

Fort Devens' Main and North Posts were originally divided into five zones for investigative studies. The zones were the North Post Zone, the Industrial Zone, the Willow Brook Zone, the Mirror Lake Zone, and the Nashua River Zone. Since the identification of reuse parcels and districts, these zone designations are no longer used to identify specific areas on the installation.

OU Designations

Eight OUs have been identified at the former Fort Devens. OU types may be based on proximity, related geologic conditions, common media, or priorities. The following is a summary of these OUs:

- Shepley's Hill Landfill Groundwater OU: This OU is defined by the contaminated groundwater that flows beneath Shepley's Hill Landfill (AOC 5). The sanitary landfill incinerator (Building 38, AOC 4) and Landfill No. 1 Asbestos Cell (AOC 18) are included in this OU.

- Plow Shop Pond / Grove Pond OU: Plow Shop Pond and Grove Pond (AOC 72) are not located on the former Fort Devens, but are located adjacent to and directly northeast of Shepley's Hill Landfill. The U.S. EPA has assumed responsibility for investigating this site.

- Barnum Road Maintenance Yard OU: This OU is composed of the Cannibalization Yard (AOC 44) and the Table of Distribution and Allowances (TDA) Maintenance Yard (AOC 52). The soil at this OU is contaminated with petroleum products and organic chemicals.

- South Post Groundwater OU: The AOCs that are contributing to this OU are AOCs 25, 26, and 27; also known as the South Post Impact Area (SPIA) Explosive analytes have been found in the groundwater in the vicinity of these sites. AOC 41 may also be contributing to the groundwater contamination, and the planned monitoring of groundwater at the SPIA will include AOC 41.

- Landfills: The Landfill Remediation Feasibility Study (FS) was completed in January 1997 and contained detailed information on the proposed cleanup plan and other options available for use at AOCs 9, 11, 40 and 41 and SAs 6, 12 and 13. The Final Proposed Plan for these sites was completed in November1998 and summarized the Army's proposed plan for cleanup at these seven landfills.

- The Final Remedial Investigation (RI) at AOC 57 was completed in June 2000. In addition, Final Remedial Investigations (RIs) were completed at AOC 50 and AOC 69W, in January 2000 and August 1998 respectively.

2.1.2 ENVIRONMENTAL RESTORATION EARLY ACTIONS STRATEGY

The Site Investigation (SI) Data Package concept was developed to accelerate the early action decision making process. The purpose of the SI Data Package is to evaluate the absence or presence of contamination, and, if present, the potential pathways of contaminant migration and potential risks to human and ecological receptors at each SA. The SI Data Package provides tabulated chemical data, field observations, and interpreted data for a preliminary site evaluation. Based on the results of the preliminary site evaluation, one of the following recommendations will be made:

- No Further Action (NFA): Once an SA has been identified as requiring NFA, an NFA decision document will be prepared and submitted for the BCT's approval and signature.
- Initiate an Immediate Removal or Interim Action: Once a SA has been identified as requiring an immediate removal or interim action, CENAE is notified by Fort Devens to start the removal action. Once the removal action has been completed, and if the SA has no significant residual contamination, an NFA document will be prepared and submitted for BCT approval.
- Perform a Remedial Investigation/Feasibility Study (RI/FS): If contamination is found to go beyond the scope of an immediate or interim action, then an RI will be conducted to determine the extent of the contamination. The results of the RI will be used to conduct an FS, which scopes potential remedial tactics.
- Perform a Supplemental SI: In some cases, supplemental SI work may be recommended to fill data gaps for a particular SA. The results of the supplemental SI will be used to determine if preparation of an NFA document, a removal/interim action, or an RI/FS is needed.

2.1.3 REMEDY SELECTION APPROACH

All initial SIs for NPL sites at the former Fort Devens have been completed at this time. Supplemental SIs was also conducted at several sites. Remedies for each of the sites will be selected in accordance with statutory and NCP criteria and CERCLA as described below. Particular attention will be given to the following during the evaluation of alternatives:

ARARs: Applicable requirements for anticipated RAs will be identified by the Project Team for each site separately. The effectiveness of alternatives in reducing concentrations of contaminants to chemical-specific ARARs will be evaluated. Chemical-specific ARARs set health- or risk-

based concentration limits or discharge limitations in various environmental media for specific hazardous substances, pollutants, or contaminants.

- Land Use/Risk Assessment: The reuse of any parcel of land defines the required level of remediation. Risk assessment exposure scenarios consistent with the reuse of the installation as proposed in the Community Relations Plan (CRP) were developed during the RI process.

- Applicable Remedies: Focused FSs will be utilized to accelerate remedy selection at sites where contaminants are restricted to a single media. Additionally, the generic remedy approach will also be used, where applicable. At complex and/or multimedia sites, the standard evaluation of remedial alternatives through a detailed FS approach will occur.

As defined in the FFA, this process involves two secondary documents and one primary document. First, an Initial Screening of Alternatives, a secondary document, will be published. This document describes alternatives considered for remediation of the site and describes those that may be feasible at the site. Under the Fort Devens Acceleration Plan, this document is to be published at the same time as the draft RI report. Next, a Detailed Screening of Alternatives, also a secondary document, is published. This document reviews the alternatives retained for further evaluation after the initial screening and selects those that may be appropriate for the site and should be considered in the FS report. This document is published before the FS report. The FS report, a primary document, considers the retained alternatives and identifies preferred remedial alternatives. Selection of the remedial alternative occurs in the Proposed Plan (PP).

- Soil Remedies: The former Fort Devens had developed Draft General Management Procedures for Excavated Waste Site Soils. These procedures were developed to address management of petroleum-contaminated soils at the former Fort Devens. The procedures focus upon the reuse of soil waste generated during remediation. Soil is classified into four general categories:

    - Category A - Soils contain contaminant concentrations at or below background levels and may be reused anywhere at the former Fort Devens.
    - Category B - Soils may be reused at the former Fort Devens for industrial purposes.
    - Category C - Soils can only be placed under the final cover of an approved solid waste landfill.
    - Category D - Without treatment, soils cannot be reused at the former Fort Devens under any circumstances.

The Draft General Management Procedures for Excavated Waste Site Soils provides only general guidance for the reuse of soils. For individual sites, treatment and characterization requirements are determined using the site-specific Excavated Soils Management Plan. This plan will specify sampling requirements to characterize soils. After characterization, the soil may be immediately reused following the General Management Procedures or undergo treatment prior to reuse. For

example, after excavation and characterization, if a soil pile is determined to be Category C, the Excavated Soils Management Plan may direct the placement of soils under the final cover of an approved solid waste landfill.

2.2 Compliance Programs

Compliance activities at the former Fort Devens are being conducted in coordination with environmental restoration activities being completed under the BRAC IRP. The statutory basis for IRP activities at the former Fort Devens is CERCLA. Compliance-related management and restoration activities are differentiated from CERCLA actions because they are regulated primarily under other statutes. These statutes include RCRA Subtitles C, D, and I; the CWA; CAA; TSCA; NEPA; MCP (the Massachusetts Contingency Plan); and local regulations.

Compliance issues dealing specifically with the Devens Reserve Forces Training Area are handled by the U.S. Army Devens Reserve Forces Training Area Directorate of Public Works - Environmental Division (DPW - ED).

2.2.1 Storage Tanks

USTs (underground storage tanks) and ASTs (above-ground storage tanks) were used for storage of petroleum products at the former Fort Devens for heating purposes, waste oil, and vehicle fueling. Compliance activities and environmental restoration activities related to these storage tanks are described below.

2.2.1.1 USTs

The USEPA has delegated the management of the UST program to the Commonwealth of Massachusetts (Ref. 40 Code of Federal Regulations (CFR) 280 et seq.). The MADEP has primary enforcement, and USEPA's delegation effectively suspends the applicability of certain federal regulations in favor of the state program, thereby eliminating duplicative requirements. Therefore, UST investigation and closure activities at the former Fort Devens are being conducted under MADEP Policies WSC-400-89, WSC-401-91, and 527 CMR 9 et seq. For the purposes of the BCP, the USTs of the former Fort Devens are divided into three categories:

1. Tanks removed prior to March 31, 1996;
2. Tanks managed by the DCC after March 31, 1996;
3. Tanks managed by the Devens Reserve Forces Training Area after March 31, 1996.

A total of 538 former and/or current USTs have been identified. At this time over 532 USTs have been removed and approximately 6 remain. Existing USTs located within the Devens Reserve Forces Training Area (AREE 62) are managed by the DPW-ED. Remaining USTs associated with land transferred to the DCC are the responsibility of the DCC. Previously removed Army

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USTs (AREE 63) were investigated under the Phase I BRAC EE, and the Final AREE 63 Report was completed in September 1995. The BRAC Environmental Office maintains a database of former and current USTs which includes tanks managed by DPW-ED and tanks managed by the DCC.

Under the Federal Facilities Compliance Act of 1992, Congress has subjected federal facilities to the same laws and requirements pertaining to USTs as non- federal facilities. (42USC 6991f.) An exception to this waiver of sovereign immunity is the exemption for tanks used for storage of heating oil for on-premise consumption. However, Army Regulation 200-1, Environmental Protection and Enhancement, in some cases creates regulatory (class III) rather than statutory (class I) compliance requirements. Tanks defined by federal regulation (40CFR 280.12) as USTs are subject to Federal and State laws. Federal UST regulations (280 CFR 280,20(c) prescribe the requirement for USTs to have spill containment and overfill prevention equipment. These laws only apply to tanks defined as USTs, i.e., those that contain gasoline, diesel, or heating fuel, unless the heating fuel is consumed on the premises where stored. Massachusetts UST regulations (527 CMR 9.24) include on-premises consumptive use heating fuel tanks among those that need retrofit. However, such tanks with a capacity of 1,100 gallons or less are exempt from the spill-containment manhole requirement, provided the tank was installed before January 1, 1989.

Federal UST laws prescribe a compliance deadline of December 1998 for installing retrofit equipment, including cathotic protection for single wall steel tanks. State law moved this compliance deadline for some retrofit equipment up to May 1993, and included tanks containing heating fuel for consumptive use on the premises where stored. The application of the retrofit requirement to tanks at Federal Facilities, other than those defined in federal law as USTs, is a regulatory (Army) rather than a statutory requirement. All Devens Reserve Forces Training Area tanks which do not have spill containment and/or overfill protection are programmed for Class III replacement or retrofit, but are not presently funded. The regulatory requirements for retrofit are environmentally justified even though not applicable as explained above. Federal and State laws require USTs to be fitted with leak detection.USTs with automatic leak detection systems must have those systems tested annually. This, like spill containment and overfill protection, is a Class III requirement.

The Devens Reserve Forces Training Area compliance strategy is to remove or replace in lieu of retrofit as a "pollution prevention initiative". Experience with UST removals indicates a high likelihood of finding contaminated soil when working around the fill point to install retrofit equipment, as the lack of such equipment has resulted in some level of spillage over the years. Due to the age of most of the tanks, removal with a complementing natural gas conversion of the heating plant or UST/AST replacement, rather than retrofit is recommended.

Before a new tank is put into operation, information on the type of tank, contents, capacity, etc., must be provided to the Massachusetts Department of Public Safety-Division of Fire Prevention